Health Care Data Report

Utilization and Charges: Hospitals and Freestanding Ambulatory Surgery Centers

2001

March 2003

Bureau of Health Information
Division of Health Care Financing
Wisconsin Department of Health and Family Services

FOREWORD

The data for this report were collected quarterly during 2001 from Wisconsin hospitals and freestanding ambulatory surgery centers (FASCs), under Chapter 153, Wisconsin Statutes. The report presents an annual summary of data on utilization and charges at those facilities.

The portion of the report devoted to inpatient data contains information on services provided to hospital inpatients, the primary reasons for hospitalization, charges for services received, and the most common diagnostic conditions. It also contains selected information for individual hospitals. Comparisons are made to 2000 data to assist the reader in understanding where change occurred. The section devoted to ambulatory surgery reviews utilization and charges for patients undergoing selected surgical procedures at hospitals and FASCs.

General medical-surgical (GMS) and specialty hospitals (excluding federally operated hospitals) provided inpatient data. The report includes data from 127 GMS hospitals, 11 psychiatric hospitals, 1 alcohol and other drug abuse (AODA) hospital, 2 rehabilitation hospitals, and 2 state-operated mental health institutes that reported data during 2001. Ambulatory surgery data were collected from 124 GMS hospitals and 31 FASCs.

John Chapin, Director, and Vonnie Buske, Deputy Director, Bureau of Health Information, provided overall direction for this report. Judith Nugent, Chief, Person-Level Data and Analysis Section, supervised the report's planning and production.

Hospital inpatient and ambulatory surgery data not included in this report may be available through standard public use files or through custom data requests. Interested persons should contact BHI regarding the availability and cost of additional data.

Inquiries should be directed to:

Bureau of Health Information
Division of Health Care Financing
P.O. Box 309
Madison WI 53701-0309

E-mail: askbhi@dhfs.state.wi.us

Persons with hearing or speech impairments may call: 1-800-947-3529. Your message will be relayed to the Bureau of Health Information.

Suggested citation:

Wisconsin Department of Health and Family Services, Division of Health Care Financing, Bureau of Health Information. *Health Care Data Report: Utilization and Charges: Hospitals and Freestanding Ambulatory Surgery Centers, 2001* (PHC 5352). March 2003.

TABLE OF CONTENTS

Appendix 4: Maps

Appendix 5: Index of Hospitals and Freestanding Ambulatory Surgery Centers

SELECTED FINDINGS

Inpatient Data

- In 2001, Wisconsin hospitals reported 647,992 inpatient hospitalizations. These resulted in almost 3.0 million days of care and total billed charges of more than $7.5 billion.
- On average, a hospital patient was charged $11,597 per hospitalization during 2001. In general medical-surgical (GMS) hospitals, the average inpatient charge was $11,655. In the specialty hospitals, charges differed between long-term care and short-term specialty care. The average charge was $6,455 in psychiatric hospitals, $10,553 in the alcohol and other drug abuse (AODA) hospital, $25,571 in rehabilitation hospitals, and $28,405 at the state-operated mental health institutes.
- The average hospital stay was 4.6 days. Patients stayed an average of 4.3 days at GMS hospitals, 8.6 days at psychiatric hospitals, 16.6 days at the AODA hospital, 22.3 days at rehabilitation hospitals, and 52.4 days at the state-operated mental health institutes.
- In 2001, there were 65,970 obstetrical hospitalizations (DRGs[1] 370-375) and 69,195 neonatal hospitalizations (DRGs 385-391). There were also 100,769 cardiovascular, 60,970 orthopedic, 36,781 psychiatric, and 16,463 AODA-related hospitalizations in Wisconsin (includes rehabilitation hospitals and state-operated mental health institutes). Combined, these accounted for 54 percent of all hospitalizations in the state.
- The most common reasons for hospitalization were related to birth. These included normal newborn (DRG 391) and normal delivery (DRG 373). Together, these two DRGs represented 15 percent of all hospitalizations.
- Most neonatal stays were classified as "normal newborns" (full-term without complications), accounting for 50,658 hospitalizations (73 percent of all neonatal hospitalizations) with an average charge of $1,285 and an average length of stay of 2.1 days.
- Similarly, 69 percent of all deliveries were classified as "normal" (vaginal delivery without complications). Normal deliveries accounted for 45,220 hospitalizations at an average charge of $3,802. In 12 percent of deliveries, there were complications during vaginal delivery or additional surgery at the time of delivery (e.g., sterilization).
- Approximately 19 percent of all births were delivered by cesarean section.
- Statewide, 9,649 patients had open-heart surgery at 28 GMS hospitals, with an average length of stay of 8.5 days and an average charge of $59,554.
- Four GMS hospitals performed 70 heart transplants, with an average charge of $219,623 and an average length of stay of 52.5 days.
- The most expensive DRGs were Extensive Third Degree Burns with Skin Graft (DRG 504), at an average charge of $227,589, and Heart Transplant (DRG 103), at an average charge of $219,623. Combined, they accounted for only 91 hospitalizations, yet their complexity and length of stay resulted in total charges of more than $16 million.
- The DRGs generating the most total charges were Major Joint and Limb Reattachment (DRG 209, which includes hip replacements), at $356 million, and Cardiac Pacemaker Implant or Angioplasty with

[1] See definition on page 6.

Coronary Artery Stent Implant (DRG 116), at $294 million.

- Females accounted for 58 percent of all hospitalizations. Eighteen percent of hospitalizations among females were childbirth-related.
- During 2001, injury-related hospitalizations and ambulatory surgeries accounted for almost $855 million in charges at hospitals and FASCs (freestanding ambulatory surgery centers).

Ambulatory Surgery Data

- Ambulatory surgery was performed at 124 Wisconsin GMS hospitals and 31 FASCs in 2001. Data for 683,130 cases were collected: 584,513 from hospitals and 98,617 from FASCs.
- Colonoscopy, a diagnostic procedure of the lower gastrointestinal tract, was the most frequently reported ambulatory procedure in 2001, with 49,368 cases.
- Laparoscopic cholecystectomy (gallbladder removal) was the most costly of the ambulatory procedures covered in this report, with a median charge of $6,488. The least expensive was flexible sigmoidoscopy, with a median charge of $420.

Comparison to 2000 Data

- Compared to 2000, the number of hospitalizations in 2001 increased by 2.0 percent, while the number of patient days grew by 1.4 percent.
- Statewide, the average charge per hospitalization rose from $10,344 to $11,597 (12.1 percent) between 2000 and 2001.
- The average charge per hospitalization increased from $10,373 to $11,655 (12.4 percent) at GMS hospitals; from $5,972 to $6,455 (8.1 percent) at psychiatric hospitals; from $9,264 to $10,553 (13.9 percent) at the AODA hospital; and from $21,487 to $25,571 (19.0 percent) at rehabilitation hospitals.
- The average charge decreased from $30,320 to $28,405 (6.3 percent) at the state-operated mental health institutes.
- Average length of stay decreased 0.7 percent at GMS hospitals, 7.2 percent at psychiatric hospitals, and 9.0 percent at the state-operated mental health institutes. Average length of stay increased 4.4 percent at the AODA hospital and 29.6 percent at rehabilitation hospitals.
- The number of cardiovascular ambulatory surgeries increased 6.0 percent from 2000 to 2001; while facility charges attributable to these surgeries grew by 22.1 percent, from $184.6 million to $225.4 million.

READER'S GUIDE TO THE REPORT

This Reader's Guide provides a basis for understanding and evaluating the data in this report. It explains the kinds of data collected and the terminology needed to understand it. (See page 5 for an explanation of terms used in this report.)

Data Source

This report presents selected data from four quarters of 2001 patient-level data submitted by hospitals and FASCs.

The patient-level data submitted include items such as patient characteristics (age, sex, race), diagnoses, procedures, and charges. Data are derived from billing forms and include information on each patient served in a hospital or freestanding ambulatory surgery center. Patient names cannot be identified, in order to maintain patient confidentiality. Hospitals and FASCs submit patient-level data every three months.

What You Can Learn From this Report

The following is a summary of the information presented in this report:

- The report identifies the average charge for selected medical or surgical treatments. It does not address how much an individual will actually be billed by the facility for that service because each case is different.
- The report identifies a facility's average charges for selected services. It does not provide information on physician charges for inpatient or ambulatory services because those data are not collected.
- The report identifies the variation in charges among hospitals. Hospital charges vary for many reasons; a summary of some of those reasons is provided on pages 4-5.
- The report identifies trends in health care utilization and charges.

Charges vs. Revenues

The amount a facility bills for a patient's care is known as the charge. What it actually receives in payment is known as revenue. This report lists the average charges billed by facilities for selected services. These charges are derived from billing forms, which list the actual charges for each patient. However, health care facilities frequently negotiate discounts with insurance companies or other large purchasers of health care services. The amount actually collected by the facility may differ substantially from the amount billed.

Adjusting the Data for Patient Risk

Many factors affect how much hospitals charge patients for care. One major factor is patient risk, or the severity of illness of patients served by a facility. Sicker patients tend to stay in the hospital longer, require more intensive care, and use more resources than patients who are less ill. Because these factors affect how much patients are charged, comparing charges among patients with the same illness but different degrees of severity is problematic. But differences in severity of patient illness can be estimated, and adjustments can be made that allow better comparisons of charges between patients with varying severity.

In recent years, a number of methods have been developed to measure and adjust for variations in hospital charges caused by illness severity differences in patients. BHI uses computer software products that risk-adjust the inpatient data submitted by hospitals.

The risk-adjustment software used for this report looks at the diagnosis and procedure codes, sex, age, admission source, and discharge status for each patient. All these factors may affect the amount of resources patients use. The software then compares each patient to a nationwide database of similar patients and adjusts the patients' charges to account for the effect of these severity factors. In making this

adjustment, the software attempts to calculate what a patient's charges would have been if the patient's severity of illness was the same as the "average" patient's.

If the actual average charge for a group of patients is *higher* than their risk-adjusted average charge, it means that the patients in this group had a *greater* than average severity of illness.

Once a facility's charges have been risk-adjusted, they may be compared to other risk-adjusted charges, such as those of another hospital or group of hospitals.

In this report, risk-adjusted DRG (Diagnosis Related Group) charge data are presented for each GMS hospital and the following three comparison groups: analysis area, inpatient volume group, and all GMS hospitals as a single group. Analysis areas group GMS hospitals geographically; inpatient volume groups allow comparisons between GMS hospitals of similar size; the "all GMS hospitals" data permit a hospital to be compared to statewide figures.

The report does not risk-adjust charges for psychiatric and alcohol and other drug abuse (AODA) DRGs because differences in charges for these DRGs usually reflect program differences rather than variations in illness severity. For example, one hospital may treat psychiatric patients in longer-term inpatient programs, while another facility may stabilize similar patients and then transfer them to residential facilities following a short inpatient stay.

***Note**: See the technical note on page 481 for a more detailed description of the methodology used to risk-adjust data in this report.*

Why Facility Charges May Differ

New technology - The equipment facilities use to provide services differs in age, sophistication, and utilization. Facilities with the latest technology may have higher charges than those with older, less sophisticated equipment.

Staffing costs - Salary scales may differ regionally and are typically higher in urban than rural areas. Furthermore, competition for nurses and other skilled personnel may result in higher staffing costs and, therefore, higher charges.

Intensity of care - Facilities differ in the severity of illness of patients (i.e., some facilities care for more severely ill patients than others). Patients within the same DRG may need very different levels of service and staff.

Efficiency of operation - Facilities vary in the utilization and efficiency of services they provide. Infrequently used services may cost more per patient than services that are used more frequently.

Differences in coding - Facilities vary in their coding systems and personnel, and in the number of billing codes they put on a billing form. The use of additional appropriate codes may result in a patient being assigned to a DRG with greater reimbursement or may otherwise justify higher charges. Facilities with better-trained personnel or more sophisticated coding software are more likely to place these additional codes on their billing forms and, therefore, may have higher charges than facilities with less expertise.

Payer mix:

Discounts - Facilities negotiate and offer volume discounts to Health Maintenance Organizations (HMOs), Preferred Provider Organizations (PPOs), and other large-volume purchasers of health care services. The number of these organizations has grown considerably in recent years. Full charges are paid for only a very small proportion of patients.

Percentage of government pay - Government payers generally reimburse facilities at rates below their full charges, similar to the discounts offered to commercial payers. Therefore, facilities with a large percentage of patients

whose charges are paid either by government programs or discounted commercial payers may report large gaps between what they bill and what they actually receive. This may result in higher charges, including those for non-discounted patients.

Facility price structures - Some facilities spread the cost of services and equipment over all patients. Others bill the full cost of a service to those patients actually using the service. Furthermore, facilities may provide some services at a loss while allowing other facility operations to subsidize the losses. Any of these practices can result in significantly different charges for a given DRG.

Range of services provided - Facilities differ in the range of services they provide to patients. Some may provide the full range of services required for diagnosis and treatment during the stay. Others may stabilize patients and then transfer them to another facility for more specialized or rehabilitative care.

Data-related issues - Facilities differ in the number of cases served, the case-mix and illness severity of patients, and the comparability of patients within DRGs. For example, a single case can greatly affect a facility's average charge if the facility reported only a few cases.

Capital expenses - Facilities differ in the amount of debt and depreciation they must cover in their rate structure. A facility with a heavy debt load, a new building, or a major renovation to amortize may have higher charges than a facility not facing such expenses. Furthermore, facilities may choose to lease or purchase equipment or facilities. The choices made about financing of capital projects may affect charges in different ways.

Basic Terms and Concepts

Statistics

Distribution - Distribution is simply a term referring to a set of events, or data. The charges in the following example could be referred to as a distribution. The distribution can be described in many ways, such as the range, which indicates the low and high values in the distribution (in this case $4,984-$7,002). Average, median, percentile distribution, and standard deviation are other terms used to describe the data in the distribution.

Average (mean) - This is the sum of all values in a distribution divided by the number of values in the distribution. For example, to determine the average charge per discharge for seven pneumonia patients at a particular hospital, the charges for each patient are added together and divided by seven. If the charges for the seven patients were $6,216, $5,425, $4,984, $5,733, $7,002, $6,558, and $5,193, the average charge per discharge would be computed as follows:

$$\begin{array}{r} \$6{,}216 \\ 5{,}425 \\ 4{,}984 \\ 5{,}733 \\ 7{,}002 \\ 6{,}558 \\ \underline{+5{,}193} \\ \$41{,}111 \end{array}$$

$\$41{,}111 \div 7 = \$5{,}873$

Median - The median is the middle value in a distribution when all the values are ranked in order from low to high or high to low. To determine the median charge for the same seven pneumonia patients, the charges are first ranked in order:

$4,984, $5,193, $5,425, $5,733, $6,216, $6,558, and $7,002

The median charge is the middle value: $5,733.

Averages (means) can be significantly affected by a few unusually low or high values (called "outliers"). Since median figures are not affected to such a degree by outliers, they may be more representative of the distribution. Notice if the highest charge for the seven pneumonia patients was $10,502 instead of $7,002, the average charge would climb from $5,873 to $6,373, but the median charge would remain at $5,733. In this case the median charge is a better representation of the facility's charges for pneumonia patients.

Percentile and percentile distribution - A percentile marks a point in a distribution above and below which some percent of the events, or data, fall. For instance, if $2,000 represents the 25th percentile of charges for a certain DRG or ambulatory surgical procedure, it means 25 percent of the patients who were in the DRG or who had the procedure were charged $2,000 or less. Conversely, 75 percent of the patients were charged $2,000 or more. The 25th, 50th (median), and 75th percentiles are also referred to as quartiles, because they mark the points in the distribution above and below which lie one-quarter, one-half, and three-quarters of the events.

Standard deviation - This is a measure of the average variation above or below the mean. When data are in a normal distribution, approximately 68 percent of the values will fall within one standard deviation of the mean, 95 percent within two standard deviations, and 99.7 percent within three standard deviations.

Inpatient Data

Analysis areas - These are groups of counties originally established as health planning districts for federal and state governments. The analysis areas are: Southern (Area 1), Southeastern (Area 2A), Milwaukee County (Area 2B), Lake Winnebago (Area 3), Northeastern (Area 4), West Central (Area 5A), Southwestern (Area 5B), North Central (Area 6) and Western Lake Superior (Area 7). (Refer to the map in Appendix 4 for the analysis area boundaries.)

Average (mean) charge - This is the sum of all charges for a service or facility divided by the number of discharges. The average charge is an approximation of what an average patient would be charged. The charges listed in these reports do not include fees for physician services or convenience services, such as television.

Average (mean) length of stay - This is the total number of days spent in a hospital by a group of patients divided by the number of discharges. Length of stay affects charges because longer stays generate higher charges. In addition, it is a rough indicator of hospital efficiency or program philosophy. For example, two hospitals may have significantly different average stays for psychiatric inpatient treatment. These differences may indicate that a facility offers extended hospital stays, which tend to have higher charges, or alternatives, such as outpatient treatment, which tend to have lower charges.

Median charge and median length of stay - Charges and lengths of stay may also be presented as medians. The median charge represents the amount that half the patients were charged more than and half were charged less than. The median length of stay is expressed as a number of days. Half the patients stayed in the hospital longer than the median length of stay, and half stayed a shorter period of time.

Discharge – A patient becomes a discharge once he or she officially leaves the health care facility. The number of discharges affects how a hospital is staffed, what types of services a hospital offers, and how well it competes in the broader health care system. To some degree it also affects costs because, when viewed relative to the facility's capacity, the number of discharges is a partial indicator of efficiency. The number of discharges is used to calculate the average charge and average length of stay at a facility.

DRG - The basic unit of analysis for inpatient hospitalizations in this report is the diagnosis-related group, or DRG. It is one method of classifying inpatients. The federal government established DRGs as a way to pay hospitals for care of Medicare patients; all payers now use DRGs.

DRGs group patients with similar characteristics, such as diagnoses, procedures, the presence or absence of complicating conditions, and age. For example, patients undergoing simple cesarean sections are assigned to DRG 371. C-section patients with complications during delivery are assigned to DRG 370.

Under Medicare, reimbursements for all patients in the same DRG are the same amount, with only very unusual cases receiving more reimbursement. In 2001, there were 499 DRGs. Definitions of DRGs are updated by the federal government annually on September 30. Wisconsin's Medical Assistance (Medicaid) program has also developed a DRG-like program for reimbursing hospitals for their Medical Assistance patients.

Except for rehabilitation hospitals, BHI uses DRGs to classify all hospital inpatients. By using DRGs, BHI is able to present utilization and charge data in a manner commonly understood by health insurers, providers, and other health care experts.

To describe patients at rehabilitation hospitals, BHI uses a classification system developed by the federal Centers for Medicare and Medicaid Services (formerly the Health Care Financing Administration). This system groups patients into rehabilitation categories (e.g., stroke, spinal cord injury). The table in Appendix 1 lists the diagnosis codes used to create these categories.

E-Codes – Health care providers and death certificate coders use E-codes (the "E" comes from "external" cause) to describe the cause of an injury resulting in treatment or death. E-codes are part of the International Classification of Diseases (ICD-9-CM codes), which are used to describe all diagnoses and surgical procedures. BHI collects the E-codes for all injury-related hospitalizations and outpatient surgeries in Wisconsin.

Expected payer - Data on expected payers are compiled from hospital bills. The bills indicate who the facility expects will pay for the services; however, the expected payer does not always pay the bills. A patient's insurance may not cover the particular procedure. The indicated insurer may not actually cover a patient. Therefore, expected pay sources are to be viewed as preliminary.

Expected pay sources include the following:

Medicare - reimbursement under Part A (facility care) of Title 18. Medicare is a federal health insurance program for the elderly and disabled.

Medical Assistance - reimbursement from Wisconsin's Medicaid (Title 19) program only. Reimbursement from Medicaid programs in other states is categorized as *Other Government*. Medicaid is a federal/state program that helps pay for health care for indigent and other eligible persons.

Other Government - reimbursement from CHAMPUS (refers to Civilian Health and Medical Program of the Uniform Services - health benefits for military personnel and dependents), county general relief, county 51.42/51.437 programs, Medicaid from a state other than Wisconsin, and other government sources.

Commercial Insurance - reimbursement from Blue Cross/Blue Shield and other traditional insurance companies, alternative payment systems (e.g., HMOs, PPOs), self-funded plans, and Workers' Compensation.

Self-Pay - reimbursement from a patient's own resources. Self-Pay may also include insurance that has not been assigned (reimbursement made directly to the patient, rather than to the facility).

Unknown - the facility had not yet determined from whom it expected reimbursement.

HCFA-1450 - see UB-92 form.

Hospital Types - There are five types of hospitals providing services in Wisconsin:

Alcohol and other drug abuse (AODA) hospitals - provide diagnostic and therapeutic services to patients with drug or alcohol dependencies.

General medical-surgical (GMS) hospitals - provide diagnostic and therapeutic services to patients for a variety of medical conditions, both surgical and non-surgical.

Psychiatric hospitals - provide diagnostic and therapeutic services to patients with mental or emotional disorders.

Rehabilitation hospitals - provide a comprehensive array of restoration services for the disabled and all support services necessary to help them attain their maximum functioning.

State-operated mental health institutes - provide comprehensive and intensive diagnostic, therapeutic, and support services to patients with unusually complex or difficult mental, emotional, or developmental disorders.

ICD-9-CM codes - (International Classification of Diseases-9th Edition-Clinical Modification) the ninth version of a coding scheme used by hospitals and third-party payers to classify diagnoses and procedures.

Inpatient volume groups - a system for classifying hospitals based on the total number of discharges, adjusted to account for patient mix. Using data from calendar year 2001, the number of patients within each DRG at a hospital was multiplied by the statewide average charge for that DRG. These adjusted charges were then totaled for each hospital, and the hospitals were ranked from lowest to highest. Based on these data, six inpatient volume groups for GMS hospitals were created: five containing 21 hospitals, the sixth containing 22.

Newborn - a discharge reported in the range of ICD-9-CM codes V30 through V39 under *Principal Diagnosis* on the UB-92 form. The term refers to a baby born in a hospital.

Racial distribution - self-reported data on the racial background of patients. Racial groups appearing in the report include Native American, Asian/Pacific Islander, Black, White, Other, and Not Ascertained. Patients are not required to identify their racial background, and the data are based solely on how patients classify themselves.

Risk adjustment - also known as severity adjustment, the modification of hospital data to account for differences in the severity of illness of patients. By adjusting for variation caused by differences in patient risk or severity of illness, more accurate comparisons of data (e.g., charges) can be made between hospitals.

Specialty hospital - a hospital that provides services to patients with specified medical conditions or for special categories of patients. In Wisconsin, this includes psychiatric, alcohol and other drug abuse (AODA), and rehabilitation hospitals, as well as the state-operated mental health facilities. Specialty hospitals were placed in a group by themselves, inpatient volume group 7.

UB-92 form - a uniform patient billing form (HCFA-1450) developed by a national uniform billing committee under the auspices of the federal Centers for Medicare and Medicaid Services (formerly the Health Care Financing Administration).

Ambulatory Surgery Data

Ambulatory surgery - Also called outpatient surgery, ambulatory surgery refers to surgical procedures for which patients require less than a 24-hour stay.

Patients undergoing ambulatory surgery are not necessarily comparable to those undergoing the same procedure on an inpatient basis. An inpatient may have greater severity of illness than an outpatient or may have additional, more complicated procedures performed at the same time. Then, too, physicians may differ over the choice of an inpatient versus an outpatient setting for surgery on the same type of patient.

However, there is very little difference between the patients treated in hospital-based ambulatory surgery units and freestanding ambulatory surgery centers (FASCs). FASCs tend to be located in urban areas and compete with hospitals for patients.

Case - defined as one patient visit, even though more than one procedure may be performed during the same surgical episode. For instance, if a myringotomy is performed on both ears during one visit, only one case will be counted, even though two procedures are performed.

CPT-4 codes - a coding scheme developed by the American Medical Association to classify procedures in an ambulatory setting.

Freestanding ambulatory surgery center (FASC) - This is a facility dedicated solely to the provision of surgery on an outpatient basis. FASCs are owned and operated independently of a hospital. BHI collects data only from FASCs certified to treat Medicare patients, although these facilities typically treat many patients whose services are reimbursed by a variety of third-party payers. The data submitted to BHI by FASCs includes all patients who underwent ambulatory surgery, regardless of payer type.

HCFA-1500 - a federal billing form used by hospitals, physicians, clinics, and freestanding ambulatory surgery centers for reimbursement of outpatient services from the Medicare and Medicaid programs and from commercial insurance companies.

Hospital-based outpatient surgery unit - A section of a hospital that provides ambulatory surgery, these units may be part of a hospital campus or in separate buildings. They are owned and controlled by the parent hospital facility.

Procedure - a surgical operation performed on a person during a patient visit, as listed in the ICD-9-CM and CPT-4 codes. A person may undergo more than one procedure during a single surgical operation. For example, a patient who had arthroscopy with tendon repair on one leg undergoes two separate procedures.

Three-digit ZIP code area - used for geographic comparisons of ambulatory surgery utilization and charge data. Each area contains all facilities whose ZIP code begins with the same three digits (e.g., 530, 537). Refer to the map in Appendix 4 for the three-digit ZIP code area boundaries.

CHAPTER I. OVERVIEW OF HOSPITAL INPATIENT UTILIZATION AND CHARGES

Between 2000 and 2001, GMS hospitals continued the trend of shorter average lengths of stay and higher average charges, although the decrease in the average length of stay was negligible. The number of GMS inpatient hospitalizations, however, increased for the fourth year in a row, rising from 616,814 to 627,882 hospitalizations, or 1.8 percent. The average charge at GMS facilities rose by 12.4 percent in 2001, after rising 9.4 percent the year before. Since 1989, the annual number of inpatient hospitalizations and average length of stay at GMS facilities have declined by approximately 3 and 24 percent, respectively, while the average charge per stay has increased almost 165 percent.

Hospitalizations at psychiatric hospitals increased 9.4 percent from 2000 to 2001, while patient days increased 1.6 percent. The average charge per stay increased 8.1 percent.

The average charge per stay at the AODA hospital increased 13.9 percent. The number of hospitalizations and patient days decreased 15.1 percent and 11.3 percent, respectively.

Hospitalizations at rehabilitation facilities decreased by 1.5 percent, but patient days increased 27.6 percent, due to a 29.6 percent increase in the average length of stay at these facilities. The average charge per stay rose 19.0 percent.

The average charge per stay fell 9.0 percent at the state-operated mental health institutes. Hospitalizations at these two facilities increased 16.3 percent, while patient days rose 5.9 percent from the year before.

Note: In this report, the terms *hospitalization* and *discharge* are used interchangeably.

Table 1. Comparative summary of utilization and charges for hospitalizations in Wisconsin, 2000 and 2001

	2001	2000	% Diff
Number of Hospitalizations	647,992	635,174	2.0
Total Patient Days	2,972,114	2,930,329	1.4
Average Stay (days)	4.6	4.6	-0.6
Hospitalizations per 1,000 Population	119.5	118.4	0.9
Patient Days per 1,000 Population	548.3	546.3	0.4
Total Charges	$7,510,788,472	$6,566,973,231	14.4
Average Charge per Hospitalization	$11,597	$10,344	12.1

Note: Except for the state-operated mental health institutes, hospitalizations with lengths of stay greater than 100 days were not included when computing the charge data above. These hospitalizations ***were*** *included to compute the number of hospitalizations, patient days, average length of stay, and population-based rates. All hospitalizations of more than 999 days were excluded entirely from the data. During 2001 there were 23 such hospitalizations. Lengths of stay for inpatients who remained in the hospital less than 24 hours were counted as one day stays.*
Source: Inpatient Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 2. Summary data for Wisconsin hospitals, by type, 2001

Type	Number of Hospitals	Number of Hospitalizations	Patient Days	Average Stay (days)	Average Charge per Day	Average Charge per Stay
GMS	127	627,882	2,685,307	4.3	$2,757	$11,655
PSYCH	11	16,862	144,451	8.6	937	6,455
AODA	1	118	1,961	16.6	635	10,553
REHAB	2	781	17,394	22.3	1,408	25,571
STATE	2	2,349	123,001	52.4	542	28,405
TOTAL	143	647,992	2,972,114	4.6	$2,583	$11,597

*Note: Except for the state-operated mental health institutes, hospitalizations with lengths of stay greater than 100 days were not included when computing the charge data above. These hospitalizations **were** included to compute the number of hospitalizations, patient days, and average length of stay.*

Source: Inpatient Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 3. Percentage change in utilization and charges in Wisconsin hospitals, by type, 2000 to 2001

Type	Number of Hospitalizations	Patient Days	Average Charge per Stay
GMS	1.8%	1.1%	12.4%
PSYCH	9.4	1.6	8.1
AODA	-15.1	-11.3	13.9
REHAB	-1.5	27.6	19.0
STATE	16.3	5.9	-6.3

Source: Inpatient Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

CHAPTER II. SELECTED SERVICES PROVIDED TO INPATIENTS

This chapter has two sections. The first presents statewide information on six broad categories of hospitalization: obstetrical, neonatal, cardiovascular, orthopedic, psychiatric, and alcohol and other drug abuse (AODA). Data reported include the number of hospitalizations, the average length of stay, the average charge, and the median charge per hospitalization.

The second section reviews the ten most frequent reasons for hospitalization, the ten most expensive hospitalizations, and the ten types of hospitalization that generated the greatest amounts in total charges. Three tables are presented, again containing the number of hospitalizations, the average length of stay, the average charge, and the median charge per hospitalization.

The analysis is restricted to GMS (general medical-surgical), psychiatric, and AODA facilities. Patients in these facilities accounted for 99.5 percent of all Wisconsin hospitalizations in 2001. Patients in the state-operated mental health institutes and the rehabilitation hospitals are excluded because of their atypical characteristics (unusually long lengths of stay and high charges). Additional data on these special facilities are available as a data request.

Patient hospitalizations are defined in terms of diagnosis-related groups (DRGs). DRGs are a method of classifying hospital stays according to the diagnosis of the patient, the procedures performed, and other factors, such as age and the presence of complications or comorbidities (other conditions that affect the amount of care required by a patient). Many third-party payers use DRGs to reimburse a hospital at a fixed amount for all similar patients, regardless of the length of stay or actual cost incurred. The DRG system is also widely used in many kinds of health data analysis. This report uses DRGs as a way to compare similar patients.

Section 1: Hospitalization Categories

Birth-Related Hospitalizations: The Mothers

In 2001, 65,970 women delivered babies (single and multiple births) in Wisconsin hospitals, down from 66,440 in 2000.

Most deliveries (68.5 percent) were normal and uncomplicated (DRG 373). The remaining vaginal deliveries, including those with complicating diagnoses or concurrent procedures, such as sterilization (DRGs 372, 374, and 375), represented 12.4 percent of deliveries.

Statewide, the rate for Cesarean sections, also called C-sections (DRGs 370 and 371), rose to 19.1 percent of deliveries from 17.4 percent the year before.

Differences in C-section rates by hospital are often studied because they reflect individual physician practices, socioeconomic factors, access to and availability of prenatal care, and other factors. Hospitals with few deliveries may have higher C-section rates, simply because small changes in the number of C-sections affect rates more when the number of deliveries is small than when it is large. However, hospitals with many deliveries may also have high C-section rates because they have programs aimed at treating high-risk pregnancies. Therefore, a C-section rate by itself is not an indicator of hospital quality or performance but may highlight an area for further review.

Among facilities with more than 500 obstetric cases, Saint Joseph's Hospital, Marshfield, had the highest C-section rate, at 31 percent of deliveries (the same as in 2000). Beloit Memorial Hospital, Inc., Beloit, had the second highest rate, at 26 percent (down from 27 percent the year before). The lowest C-section rates at large obstetric facilities were 12 percent, at St. Michael Hospital in Milwaukee (up from 11 percent the previous year), and 13

percent, at St. Elizabeth Hospital, Appleton (up from 11 percent in 2000).

Table 4. Deliveries in Wisconsin hospitals, 2001

DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
370	C-Section with Complications	3,077	4.6	$10,323	$8,273
371	C-Section without Complications	9,507	3.7	7,783	7,036
372	Vaginal Delivery with Complicating Diagnoses	6,348	2.6	5,229	4,267
373	Normal Delivery	45,220	2.1	3,802	3,425
374	Vaginal Delivery with Sterilization &/or D&C	1,771	2.3	7,387	6,618
375	Vaginal Delivery with Operating Room Procedure	47	3.0	8,375	5,076
	Total Deliveries	65,970			

Source: Inpatient Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Birth-Related Hospitalizations: The Babies

Obstetric hospitalizations refer to the delivering mothers. The hospital stays of new babies are referred to as neonatal hospitalizations. They include newborns in the birth hospital, newborns transferred to another hospital before reaching 28 days of age, and a small number of low-birthweight infants less than 28 days old who were re-admitted following their initial hospital stay.

Neonatal hospitalizations in GMS facilities dropped to 69,195 in 2001, from 69,425 in 2000.

Table 5. Neonatal hospitalizations in Wisconsin, 2001

DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
385	Neonates, Died or Transferred	1,519	5.0	$13,044	$1,804
386	Extreme Immaturity or Respiratory Distress	1,179	36.1	75,456	47,198
387	Prematurity with Major Problems	1,150	13.5	22,144	13,754
388	Prematurity without Major Problems	2,280	4.7	5,271	2,058
389	Full Term Neonate with Major Problems	3,403	4.3	7,392	3,094
390	Neonate with Other Significant Problems	9,006	2.4	2,008	1,459
391	Normal Newborn	50,658	2.1	1,285	1,184
	Total Neonatal Hospitalizations	69,195			

Note: Includes newborns in the hospital of birth, newborns transferred to other hospitals, and low birthweight infants readmitted when less than 28 days old after their initial hospital stay.

Source: Inpatient Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Cardiovascular Hospitalizations

In 2001, cardiovascular diagnoses accounted for 100,769 hospitalizations (up from 98,979 in 2000). These patients represented 15.6 percent of all hospitalizations and 23.8 percent of all inpatient charges, compared to 15.7 percent and 24.1 percent, respectively, the year before. Charges for cardiovascular-related hospitalizations reached almost $1.8 billion.

Twenty-eight GMS hospitals (one fewer than in 2000) performed open-heart surgery (DRGs 104-109) on 9,649 patients, a 1.0 percent decrease in the number of open-heart surgeries from 2000. Three of the facilities each performed 11 or fewer surgeries. The next smallest number of surgeries a facility performed was 79. The largest number of open-heart surgeries (1,907) was performed by St. Luke's Medical Center in Milwaukee.

Four urban teaching hospitals performed 70 heart transplants in 2001, although most were performed at two of the facilities. St. Luke's Medical Center, Milwaukee, performed 34 transplants; University of Wisconsin Hospital and Clinics Authority, Madison, performed 28; Children's Hospital of Wisconsin, Milwaukee, and Froedtert Memorial Lutheran Hospital, Milwaukee, each performed four.

Table 6. Cardiovascular hospitalizations in Wisconsin, 2001

DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
103	Heart Transplant	70	52.5	$219,623	$176,427
104	Cardiac Valve Procedures w/ Catheterization	1,567	10.6	91,094	73,249
105	Cardiac Valve Procedures w/o Catheterization	1,462	8.1	63,954	50,153
106	Bypass with PTCA†	178	9.0	74,060	64,483
107	Bypass with Catheterization	3,611	8.9	55,006	47,791
108	Other Cardiothoracic Procedures	528	9.1	61,902	45,671
109	Bypass without Catheterization	2,303	6.4	40,798	34,089
115	Permanent Pacemaker w/ Heart Attack	264	6.3	36,601	33,193
116	Pacemkr. or PTCA† w/ Stent w/o Heart Attack	12,306	2.8	23,922	21,151
117	Repair of Pacemaker Device	81	3.2	13,048	9,652
118	Replacement of Pacemaker	94	2.9	19,408	16,560
127	Heart Failure and Shock	14,669	4.6	9,327	7,142
140	Angina Pectoris	2,108	1.7	5,030	4,297
143	Chest Pain	11,113	1.6	5,351	4,706
	All Other Cardiovascular Hospitalizations	50,415			
	Total Cardiovascular Hospitalizations	100,769			

†PTCA Percutaneous Transluminal Coronary Angioplasty
Source: Inpatient Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Orthopedic Hospitalizations

Diseases and injuries to muscles and the skeletal system resulted in 60,698 hospitalizations in 2001 (not including patients treated at rehabilitation hospitals). Orthopedic patients accounted for 9.4 percent of hospitalizations and 12.8 percent of total inpatient charges in GMS facilities. One patient at a psychiatric facility was treated for back-related problems. None were seen at the AODA hospital or the state-operated mental health institutes.

Major joint operations (DRG 209) were the fourth most frequent reason for hospitalization statewide and generated the most total charges of any DRG.

Table 7. Orthopedic hospitalizations in Wisconsin, 2001

DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
209	Major Joint and Limb Reattachment	16,661	4.5	$21,351	$19,618
210	Hip and Femur Procs w/ Complications	3,340	6.4	19,222	16,280
211	Hip and Femur Procs w/o Complications	1,182	4.7	14,879	13,547
212	Hip and Femur Procedures - Children	449	3.6	14,205	12,015
243	Medical Back Problems	5,221	3.7	6,500	4,963
497	Spinal Fusion w/CC	1,331	5.5	33,453	27,716
498	Spinal Fusion w/o/CC	3,506	2.8	22,854	18,776
499	Back and Neck Procedures w/CC	1,171	3.9	14,180	11,266
500	Back and Neck Procedures w/o/CC	3,793	2.0	9,479	8,399
	All Other Orthopedic Hospitalizations	24,044			
	Total Orthopedic Hospitalizations	60,698			

Note: Data exclude hospitalizations at rehabilitation hospitals.

Source: Inpatient Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Psychiatric Hospitalizations

GMS, psychiatric, and AODA hospitals treated 34,824 psychiatric inpatients in 2001 (up from 32,957 in 2000). They represented 5.4 percent of all hospitalizations and 3.3 percent of all hospital inpatient charges at those facilities.

The number of hospitalizations at psychiatric facilities increased by 9.4 percent from the 2000 number, while patient days rose by 1.6 percent.

The average charge at psychiatric hospitals increased by 8.1 percent in 2001 to $6,455, from $5,972 the year before. The average charge at psychiatric facilities in 2001 was just 80 percent of its peak in 1991 ($8,065), although it has been increasing since 1997.

Table 8. Psychiatric hospitalizations in Wisconsin GMS, psychiatric, and AODA hospitals, 2001

DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
424	Mental Illness with Surgical Operation	128	11.1	$18,473	$11,962
425	Adjustment Problems	1,433	4.2	5,534	4,157
426	Depression	4,545	4.6	4,200	2,893
427	Neuroses except Depression	2,814	4.6	3,286	1,942
428	Personality Disorders	691	6.9	7,036	3,830
429	Mental Retardation/Organic Problems	1,998	9.6	10,564	7,978
430	Psychoses	21,786	8.5	7,662	5,236
431	Childhood Mental Disorders	1,208	13.2	7,975	5,278
432	Other Mental Problems	221	5.6	5,918	3,284
	Total Psychiatric Hospitalizations	34,824			

Note: Figures exclude hospitalizations at the state-operated mental health institutes.

Source: Inpatient Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

AODA Hospitalizations

Inpatient treatment of alcohol and other chemical dependencies accounted for 16,117 hospitalizations in 2001, down from 16,189 in 2000.

The state's only dedicated AODA hospital, Libertas, in Green Bay, treated 118 inpatients in 2001, a 15.2 percent decrease from its 2000 total of 139. The average charge at Libertas rose 13.9 percent, from $9,264 to $10,553 in 2001, while the average length of stay rose 4.4 percent, from 15.9 days to 16.6 days.

Table 9. AODA hospitalizations in Wisconsin GMS, psychiatric, and AODA hospitals, 2001

DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
433	AODA, Left Against Medical Advice	828	2.4	$3,078	$2,124
434	AODA, Detox with Complications	3,372	4.3	6,985	4,611
435	AODA, Detox without Complications	9,837	2.9	2,991	2,152
436	AODA, Rehabilitation Therapy	1,119	11.3	5,213	4,372
437	AODA, Comb. Rehab/Detox Therapy	961	6.9	7,044	5,840
	Total AODA Hospitalizations	16,117			

Note: Figures exclude hospitalizations at the state-operated mental health institutes.

Source: Inpatient Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Section 2: Most Frequent, Most Expensive, and Highest Charge-Generating Reasons for Hospitalization

Most Frequently Occurring DRGs

The ten most frequently occurring DRGs (see Table 10) accounted for 31.8 percent of all hospitalizations and 21.1 percent of all inpatient charges at GMS, psychiatric and AODA facilities in 2001.

Birth-related hospitalizations (obstetric and neonatal—DRGs 370-375 and 385-391) accounted for 21.0 percent of all hospitalizations at these facilities, but only 7.7 percent of charges.

The average hospital stays for patients with the most frequently reported DRGs were relatively short (4.9 days or less for all but two DRGs). Average charges were also relatively low for the most common DRGs ($7,651) compared to the average charge for all inpatients at GMS, psychiatric, and AODA facilities ($11,519).

Table 10. Most common hospitalizations at Wisconsin GMS, psychiatric, and AODA facilities, 2001

DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
391	Normal Newborn	50,658	2.1	$1,285	$1,184
373	Normal Delivery	45,220	2.1	3,802	3,425
430	Psychoses	21,786	8.5	7,662	5,236
209	Major Joint and Limb Reattachment	16,661	4.5	21,351	19,618
127	Heart Failure and Shock	14,669	4.6	9,327	7,142
089	Adult Simple Pneumonia and Pleurisy w/CC	12,905	4.9	9,467	7,476
116	Pacemaker or PTCA† with Stent	12,306	2.8	23,922	21,151
143	Chest Pain	11,113	1.6	5,351	4,706
435	AODA, Detox without Complications	9,837	2.9	2,991	2,152
462	Rehabilitation	9,664	12.0	17,152	12,850

†PTCA: Percutaneous Transluminal Coronary Angioplasty

Source: Inpatient Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Most Expensive DRGs

Table 11 lists the ten most expensive DRGs in 2001, based on the average charge. They accounted for only 0.8 percent of all hospitalizations but 7.5 percent of total inpatient charges.

These DRGs required specialized treatment and long hospital stays. Most were surgical in nature. Together, they represented only 5,034 hospitalizations.

Table 11. Most expensive hospitalizations at Wisconsin GMS, psychiatric, and AODA facilities, 2001

DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Median Charge
504	Extensive Third Degree Burn with Skin Graft	21	64.7	$227,589	$203,558
103	Heart Transplant	70	52.5	219,623	176,427
495	Lung Transplant	23	25.9	198,875	149,495
483	Tracheostomy	1,371	38.7	169,642	147,019
480	Liver Transplant	115	24.0	163,233	133,457
481	Bone Marrow Transplant	195	28.4	128,669	88,139
104	Cardiac Valve Procedures w/Cardiac Cath.	1,567	10.6	91,094	73,249
506	Full Thickness Burn w/Graft or Inhalation Injury	63	23.4	81,692	63,134
302	Kidney Transplant	430	11.4	77,887	65,115
386	Extreme Immaturity or Respiratory Distress	1,179	36.1	75,456	47,198

Source: Inpatient Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

DRGs with Highest Total Charges

The ten DRGs that generated the highest total charges appear in Table 12. Together, they accounted for 20.5 percent of all hospitalizations and 27.3 percent of total charges. They included a mixture of high-cost conditions (e.g., tracheostomy), high-volume DRGs (e.g., normal delivery, psychoses), and DRGs that were relatively high both in volume and charges (e.g., major joint and limb reattachments).

Table 12. Hospitalizations with the highest total charge-generating DRGs at Wisconsin GMS, psychiatric, and AODA facilities, 2001

DRG	Description	Number of Hospitalizations	Average Stay (days)	Average Charge	Total Charges
209	Major Joint and Limb Reattachment	16,661	4.5	$21,351	$355,735,884
116	Pacemaker or PTCA† with Stent	12,306	2.8	23,922	294,387,178
483	Tracheostomy	1,371	38.7	169,642	224,944,756
107	Coronary Bypass with Cardiac Cath.	3,611	8.9	55,006	198,627,469
373	Normal Delivery	45,220	2.1	3,802	171,938,988
148	Major Bowel Procedures w/CC	5,213	11.0	32,695	170,277,005
430	Psychoses	21,786	8.5	7,662	166,407,739
462	Rehabilitation	9,664	12.0	17,152	165,718,438
104	Cardiac Valve Procedures w/ Cath.	1,567	10.6	91,094	42,561,653
127	Heart Failure and Shock	14,669	4.6	9,327	136,815,174

†PTCA: Percutaneous Transluminal Coronary Angioplasty

Source: Inpatient Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

CHAPTER III. E-CODES (INJURY-RELATED HOSPITALIZATIONS AND AMBULATORY SURGERIES)

E-codes (the "E" comes from "external" cause) are part of the International Classification of Diseases (ICD) system that all hospitals and death certificate coders use for the disease or injury resulting in hospitalization or death.

The level of detail that E-codes can express about the mechanism, or cause, of injuries is quite precise. Ranges of E-codes are reserved for broad categories of injuries, such as those arising from motor vehicle accidents, falls, firearms, and so forth. Within these categories, codes are available to describe specific injuries. For instance, codes E810-E819 denote motor vehicle traffic accidents. E813 is an accident involving a collision with another vehicle. A fourth digit (e.g., 813.1) describes who was injured, in this case a passenger. In conjunction with other injury codes, the nature of the injury can be specified (spinal cord, head, etc.).

In addition to injury mechanism (cause), policy makers and those who study injuries are often interested in another dimension: intent. Was the injury accidental, intentionally self-inflicted, or the result of an assault? A range of E-codes is reserved to signify injuries arising from suicidal or assaultive intent, from a wide variety of mechanisms.

In this report E-codes have been grouped into broader categories, like those described above. These groups are similar to those being suggested nationally for reporting injury mortality and morbidity.

Most of the categories include codes for intentionally self-inflicted and assaultive injuries. For instance, falls include codes for injuries sustained by jumping from a high place, as well as injuries caused by being pushed from a high place. In the tables that follow, categories containing significant numbers of self-inflicted or assaultive injuries have been subdivided into four components—accidental, self-inflicted, assaultive, and undetermined.

Although many categories are self-explanatory, some merit further explanation:

- *Motor vehicle traffic* accidents are those involving a motor vehicle that occur on public highways.
- *Motor vehicle nontraffic* accidents are those involving a motor vehicle that occur entirely off public highways.

Motor vehicles are defined as mechanically or electrically powered devices that can transport people or property on a highway. They include both on-road (e.g., automobile, motorcycle, bus) and off-road (e.g., snowmobile, ATV) devices.

- *Other pedal cycle* accidents include bicycle or tricycle accidents that are either non-motor vehicle or motor vehicle nontraffic in nature.
- *Other transport* includes all types of accidents involving trains, watercraft, aircraft, or transport animals, but not involving motor vehicles or pedal cycles. For instance, watercraft accidents include injuries arising from collisions with other boats, overturning or sinking of boats, fires and explosions on boats, etc.
- *Natural/environmental* injuries include those caused by exposure, hunger, thirst, venomous animals and plants, other animals (e.g., dog bites), and cataclysmic storms, lightning, or earth movement (e.g., mud slides).
- *Striking/struck by* includes injuries caused by falling objects, accidentally striking against or being struck by objects or persons (e.g., sports accidents), unarmed fights, and being intentionally struck by blunt or thrown objects.

This chapter includes information on injuries for hospital inpatients and patients treated in hospital-based ambulatory surgery settings and FASCs. The database excludes persons treated in emergency rooms but not admitted to the hospital (because they either died or were treated and released).

The table on the next page presents statewide data; tables follow it for each of nine analysis areas dividing the state (see map, page 487). The tables show the number of cases, the rate per 100,000 population (based on estimated 2001 population figures), and the total charges for each injury category. Totals are also shown for self-inflicted injuries and injuries caused by assault. Inpatient and ambulatory surgery data are combined.

The chapter concludes with two additional statewide tables: one displays data on self-inflicted injuries by sex; the other presents data on assaultive injuries by sex.

Table 13. Wisconsin injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and FASCs), Statewide, 2001

Statewide

Injury Category	Number Of Cases	Rate per 100,000 Population	Total Charges
Cut/Pierce Total	3,354	61.9	$19,413,411
Accidental	2,268	41.8	10,137,151
Self-inflicted	879	16.2	6,458,461
Assault	190	3.5	2,672,266
Undetermined	17	0.3	145,533
Drown/Submersion	62	1.1	641,914
Falls	29,803	549.8	339,295,368
Fire/Flames	352	6.5	10,938,482
Firearms Total	494	9.1	11,298,515
Accidental	178	3.3	2,621,093
Self-inflicted	30	0.6	1,153,222
Assault	236	4.4	6,750,435
Undetermined	50	0.9	773,765
Hot Objects/Scalds	464	8.6	6,383,945
Machinery	1,073	19.8	10,156,988
Motor Vehicle Traffic	5,918	109.2	124,318,672
Other Pedal Cycle	679	12.5	5,014,425
Other Motor Vehicle Nontraffic	1,187	21.9	14,244,032
Other Transport	337	6.2	4,331,580
Natural/Environmental	1,233	22.7	10,471,289
Overexertion	6,398	118.0	38,901,675
Poisoning Total	5,708	105.3	38,363,822
Accidental	1,816	33.5	14,446,504
Self-inflicted	3,547	65.4	21,381,816
Assault	7	0.1	75,872
Undetermined	338	6.2	2,459,631
Striking/Struck by Total	4,752	87.7	33,965,139
Accidental	3,797	70.1	25,012,971
Assault	955	17.6	8,952,168
Suffocation	534	9.9	10,979,577
Other	19,206	354.3	176,122,171
Total Self-inflicted	5,053	93.2	34,865,030
Total Assaults	2,127	39.2	29,914,399
Total Injuries	**81,554**	**1,504.6**	**$854,841,005**

Source: Inpatient and Ambulatory Surgery Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 14. Wisconsin injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and FASCs), Analysis Area 1, 2001

Analysis Area 1—Southern

Injury Category	Number Of Cases	Rate per 100,000 Population	Total Charges
Cut/Pierce Total	542	54.1	$3,006,753
Accidental	387	38.6	1,743,135
Self-inflicted	130	13.0	940,391
Assault	20	2.0	257,232
Undetermined	5	0.5	65,995
Drown/Submersion	10	1.0	89,702
Falls	5,431	542.1	56,369,752
Fire/Flames	88	8.8	3,274,533
Firearms Total	51	5.1	1,332,468
Accidental	34	3.4	347,010
Self-inflicted	7	0.7	674,247
Assault	8	0.8	278,012
Undetermined	2	0.2	33,199
Hot Objects/Scalds	103	10.3	2,407,481
Machinery	219	21.9	2,635,104
Motor Vehicle Traffic	1,166	116.4	28,749,736
Other Pedal Cycle	170	17.0	1,196,107
Other Motor Vehicle Nontraffic	208	20.8	2,426,985
Other Transport	68	6.8	610,375
Natural/Environmental	281	28.0	2,229,048
Overexertion	1,131	112.9	6,418,147
Poisoning Total	1,103	110.1	7,993,480
Accidental	323	32.2	2,591,357
Self-inflicted	716	71.5	4,813,834
Assault	1	0.1	2,951
Undetermined	63	6.3	585,337
Striking/Struck by Total	974	97.2	5,592,428
Accidental	839	83.7	4,518,463
Assault	135	13.5	1,073,964
Suffocation	166	16.6	5,119,558
Other	3,466	346.0	32,364,243
Total Self-inflicted	939	93.7	7,566,398
Total Assaults	259	25.9	2,827,643
Total Injuries	**15,177**	**1,514.9**	**$161,815,898**

Source: Inpatient and Ambulatory Surgery Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 15. Wisconsin injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and FASCs), Analysis Area 2A, 2001

Analysis Area 2A—Southeastern

Injury Category	Number Of Cases	Rate per 100,000 Population	Total Charges
Cut/Pierce Total	398	39.5	$2,239,015
Accidental	270	26.8	1,382,801
Self-inflicted	116	11.5	762,780
Assault	9	0.9	78,466
Undetermined	3	0.3	14,968
Drown/Submersion	7	0.7	57,482
Falls	4,335	430.4	54,339,187
Fire/Flames	19	1.9	221,585
Firearms Total	31	3.1	269,443
Accidental	16	1.6	95,431
Assault	11	1.1	142,036
Undetermined	4	0.4	31,976
Hot Objects/Scalds	38	3.8	324,452
Machinery	100	9.9	558,287
Motor Vehicle Traffic	641	63.6	8,918,505
Other Pedal Cycle	85	8.4	691,923
Other Motor Vehicle Nontraffic	94	9.3	963,352
Other Transport	49	4.9	475,740
Natural/Environmental	108	10.7	729,518
Overexertion	778	77.2	5,322,426
Poisoning Total	767	76.1	4,495,029
Accidental	197	19.6	1,327,974
Self-inflicted	502	49.8	2,688,166
Assault	2	0.2	9,508
Undetermined	66	6.6	469,381
Striking/Struck by Total	524	52.0	3,640,895
Accidental	435	43.2	3,050,634
Assault	89	8.8	590,261
Suffocation	59	5.9	648,418
Other	2,750	273.0	22,294,966
Total Self-inflicted	652	64.7	3,891,172
Total Assaults	277	27.5	2,762,987
Total Injuries	**10,783**	**1,070.6**	**$106,190,225**

Source: Inpatient and Ambulatory Surgery Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 16. Wisconsin injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and FASCs), Analysis Area 2B, 2001

Analysis Area 2B—Milwaukee County

Injury Category	Number Of Cases	Rate per 100,000 Population	Total Charges
Cut/Pierce Total	858	91.5	$6,827,412
Accidental	644	68.7	3,100,203
Self-inflicted	81	8.6	1,669,576
Assault	132	14.1	2,048,881
Undetermined	1	0.1	8,752
Drown/Submersion	25	2.7	284,990
Falls	6,462	689.5	107,653,702
Fire/Flames	125	13.3	6,693,921
Firearms Total	320	34.1	8,204,802
Accidental	69	7.4	1,352,869
Self-inflicted	5	0.5	153,373
Assault	212	22.6	6,128,328
Undetermined	34	3.6	570,232
Hot Objects/Scalds	185	19.7	2,834,025
Machinery	257	27.4	3,242,663
Motor Vehicle Traffic	1,555	165.9	44,788,126
Other Pedal Cycle	141	15.0	1,400,440
Other Motor Vehicle Nontraffic	96	10.2	2,794,852
Other Transport	46	4.9	1,735,915
Natural/Environmental	244	26.0	3,865,299
Overexertion	1,484	158.3	11,913,822
Poisoning Total	1,272	135.7	12,637,269
Accidental	626	66.8	7,048,253
Self-inflicted	593	63.3	5,091,580
Assault	2	0.2	11,254
Undetermined	51	5.4	486,183
Striking/Struck by Total	1,205	128.6	11,752,533
Accidental	837	89.3	6,796,388
Assault	368	39.3	4,956,145
Suffocation	117	12.5	2,797,971
Other	5,452	581.7	74,370,522
Total Self-inflicted	735	78.4	8,312,792
Total Assaults	1,070	114.2	20,226,685
Total Injuries	**19,844**	**2,117.3**	**$303,798,265**

Source: Inpatient and Ambulatory Surgery Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 17. Wisconsin injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and FASCs), Analysis Area 3, 2001

Analysis Area 3—Lake Winnebago

Injury Category	Number Of Cases	Rate per 100,000 Population	Total Charges
Cut/Pierce Total	348	60.8	$1,795,962
Accidental	167	29.2	551,374
Self-inflicted	177	30.9	1,220,703
Assault	3	0.5	20,958
Undetermined	1	0.2	2,928
Drown/Submersion	4	0.7	92,759
Falls	2,893	505.3	24,005,794
Fire/Flames	16	2.8	181,742
Firearms Total	17	3.0	126,125
Accidental	12	2.1	91,352
Self-inflicted	3	0.5	6,840
Undetermined	2	0.3	27,933
Hot Objects/Scalds	18	3.1	105,551
Machinery	131	22.9	947,491
Motor Vehicle Traffic	543	94.8	9,484,440
Other Pedal Cycle	65	11.4	335,869
Other Motor Vehicle Nontraffic	119	20.8	1,096,567
Other Transport	31	5.4	341,479
Natural/Environmental	57	10.0	431,293
Overexertion	709	123.8	3,154,866
Poisoning Total	542	94.7	2,485,199
Accidental	132	23.1	662,368
Self-inflicted	389	67.9	1,650,272
Assault	1	0.2	46,620
Undetermined	20	3.5	125,939
Striking/Struck by Total	402	70.2	3,356,051
Accidental	344	60.1	2,538,785
Assault	58	10.1	817,266
Suffocation	34	5.9	340,315
Other	1,749	305.5	10,950,620
Total Self-inflicted	649	113.4	3,898,390
Total Assaults	82	14.3	1,254,423
Total Injuries	**7,678**	**1,341.1**	**$59,232,125**

Source: Inpatient and Ambulatory Surgery Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 18. Wisconsin injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and FASCs), Analysis Area 4, 2001

Analysis Area 4—Northeastern

Injury Category	Number Of Cases	Rate per 100,000 Population	Total Charges
Cut/Pierce Total	362	60.2	$1,773,070
Accidental	243	40.4	1,044,558
Self-inflicted	110	18.3	645,073
Assault	6	1.0	64,351
Undetermined	3	0.5	19,089
Drown/Submersion	5	0.8	62,677
Falls	3,450	573.7	31,040,472
Fire/Flames	27	4.5	157,723
Firearms Total	23	3.8	324,356
Accidental	13	2.2	106,382
Self-inflicted	6	1.0	95,535
Assault	3	0.5	99,313
Undetermined	1	0.2	23,126
Hot Objects/Scalds	40	6.7	128,160
Machinery	121	20.1	927,947
Motor Vehicle Traffic	622	103.4	10,353,058
Other Pedal Cycle	91	15.1	551,560
Other Motor Vehicle Nontraffic	174	28.9	1,606,503
Other Transport	34	5.7	246,901
Natural/Environmental	133	22.1	854,253
Overexertion	874	145.3	4,439,998
Poisoning Total	614	102.1	3,333,232
Accidental	180	29.9	1,009,753
Self-inflicted	398	66.2	2,128,159
Undetermined	36	6.0	195,321
Striking/Struck by Total	502	83.5	2,845,268
Accidental	402	66.9	2,305,065
Assault	100	16.6	540,203
Suffocation	64	10.6	978,559
Other	2,228	370.5	13,769,232
Total Self-inflicted	781	129.9	4,213,233
Total Assaults	145	24.1	1,048,230
Total Injuries	**9,364**	**1,557.2**	**$73,392,970**

Source: Inpatient and Ambulatory Surgery Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 19. Wisconsin injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and FASCs), Analysis Area 5A, 2001

Analysis Area 5A—West Central

Injury Category	Number Of Cases	Rate per 100,000 Population	Total Charges
Cut/Pierce Total	284	64.7	$1,044,666
Accidental	212	48.3	849,138
Self-inflicted	69	15.7	156,134
Assault	2	0.5	19,983
Undetermined	1	0.2	19,411
Drown/Submersion	5	1.1	20,938
Falls	2,373	540.8	19,197,250
Fire/Flames	22	5.0	89,118
Firearms Total	10	2.3	95,150
Accidental	5	1.1	23,112
Self-inflicted	3	0.7	53,638
Undetermined	2	0.5	18,400
Hot Objects/Scalds	16	3.6	86,849
Machinery	90	20.5	466,715
Motor Vehicle Traffic	405	92.3	4,856,832
Other Pedal Cycle	35	8.0	145,104
Other Motor Vehicle Nontraffic	148	33.7	1,360,848
Other Transport	39	8.9	278,654
Natural/Environmental	146	33.3	641,554
Overexertion	359	81.8	2,002,647
Poisoning Total	434	98.9	2,051,568
Accidental	120	27.3	592,788
Self-inflicted	282	64.3	1,228,660
Assault	1	0.2	5,539
Undetermined	31	7.1	224,580
Striking/Struck by Total	420	95.7	1,930,027
Accidental	339	77.3	1,671,110
Assault	81	18.5	258,917
Suffocation	28	6.4	315,908
Other	1,201	273.7	6,757,478
Total Self-inflicted	378	86.2	1,567,350
Total Assaults	103	23.5	394,933
Total Injuries	**6,023**	**1,372.7**	**$41,421,754**

Source: Inpatient and Ambulatory Surgery Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 20. Wisconsin injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and FASCs), Analysis Area 5B, 2001

Analysis Area 5B—Southwestern

Injury Category	Number Of Cases	Rate per 100,000 Population	Total Charges
Cut/Pierce Total	221	86.5	$1,283,689
Accidental	113	44.2	625,402
Self-inflicted	98	38.3	569,744
Assault	8	3.1	84,004
Undetermined	2	0.8	4,539
Drown/Submersion	2	0.8	14,999
Falls	1,562	611.1	16,557,771
Fire/Flames	13	5.1	64,675
Firearms Total	8	3.1	144,738
Accidental	5	2.0	87,208
Self-inflicted	1	0.4	43,991
Undetermined	2	0.8	13,539
Hot Objects/Scalds	13	5.1	59,201
Machinery	59	23.1	658,546
Motor Vehicle Traffic	338	132.2	7,677,924
Other Pedal Cycle	36	14.1	306,349
Other Motor Vehicle Nontraffic	81	31.7	1,075,479
Other Transport	32	12.5	374,040
Natural/Environmental	58	22.7	351,172
Overexertion	250	97.8	1,693,089
Poisoning Total	361	141.2	2,149,200
Accidental	78	30.5	386,365
Self-inflicted	267	104.5	1,671,669
Undetermined	16	6.3	91,166
Striking/Struck by Total	213	83.3	1,734,063
Accidental	167	65.3	1,417,024
Assault	46	18.0	317,039
Suffocation	18	7.0	125,420
Other	651	254.7	6,728,533
Total Self-inflicted	384	150.2	2,505,156
Total Assaults	74	29.0	636,169
Total Injuries	**3,916**	**1,532.2**	**$40,998,889**

Source: Inpatient and Ambulatory Surgery Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 21. Wisconsin injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and FASCs), Analysis Area 6, 2001

Analysis Area 6—North Central

Injury Category	Number Of Cases	Rate per 100,000 Population	Total Charges
Cut/Pierce Total	281	61.3	$1,179,632
Accidental	201	43.8	685,996
Self-inflicted	72	15.7	409,430
Assault	7	1.5	74,355
Undetermined	1	0.2	9,852
Drown/Submersion	4	0.9	18,367
Falls	2,732	595.5	26,309,053
Fire/Flames	31	6.8	212,809
Firearms Total	29	6.3	772,914
Accidental	19	4.1	489,210
Self-inflicted	5	1.1	125,597
Assault	2	0.4	102,747
Undetermined	3	0.7	55,360
Hot Objects/Scalds	47	10.2	407,510
Machinery	94	20.5	702,669
Motor Vehicle Traffic	580	126.4	9,085,122
Other Pedal Cycle	47	10.2	363,997
Other Motor Vehicle Nontraffic	228	49.7	2,711,318
Other Transport	33	7.2	241,037
Natural/Environmental	167	36.4	1,227,263
Overexertion	720	156.9	3,444,172
Poisoning Total	475	103.5	2,653,930
Accidental	115	25.1	619,815
Self-inflicted	317	69.1	1,780,606
Undetermined	43	9.4	253,509
Striking/Struck by Total	448	97.7	2,788,072
Accidental	388	84.6	2,477,012
Assault	60	13.1	311,060
Suffocation	42	9.2	619,266
Other	1,522	331.8	7,955,200
Total Self-inflicted	411	89.6	2,419,467
Total Assaults	90	19.6	615,685
Total Injuries	**7,480**	**1,630.4**	**$60,692,330**

Source: Inpatient and Ambulatory Surgery Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 22. Wisconsin injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and FASCs), Analysis Area 7, 2001

Analysis Area 7—Western Lake Superior

Injury Category	Number Of Cases	Rate per 100,000 Population	Total Charges
Cut/Pierce Total	60	40.8	$263,211
Accidental	31	21.1	154,544
Self-inflicted	26	17.7	84,631
Assault	3	2.0	24,036
Falls	565	384.2	3,822,386
Fire/Flames	11	7.5	42,376
Firearms Total	5	3.4	28,519
Accidental	5	3.4	28,519
Hot Objects/Scalds	4	2.7	30,716
Machinery	2	1.4	17,567
Motor Vehicle Traffic	68	46.2	404,929
Other Pedal Cycle	9	6.1	23,075
Other Motor Vehicle Nontraffic	39	26.5	208,127
Other Transport	4	2.7	15,445
Natural/Environmental	39	26.5	141,888
Overexertion	86	58.5	444,052
Poisoning Total	140	95.2	564,914
Accidental	45	30.6	207,830
Self-inflicted	83	56.4	328,868
Undetermined	12	8.2	28,215
Striking/Struck by Total	64	43.5	325,803
Accidental	46	31.3	238,490
Assault	18	12.2	87,313
Suffocation	6	4.1	34,162
Other	187	127.2	931,378
Total Self-inflicted	124	84.3	491,072
Total Assaults	27	18.4	147,643
Total Injuries	**1,289**	**876.5**	**$7,298,549**

Source: Inpatient and Ambulatory Surgery Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 23. Self-inflicted injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and FASCs), 2001

Statewide

Injury Category	Male	Female	Total Cases
Poisoning by solid or liquid substances	1,163	2,335	3,498
Poisoning by gases in domestic use	3	1	4
Poisoning by other gases (e.g., car exhaust)	24	21	45
Hanging, strangling, and suffocation	37	18	55
Submersion (drowning)	0	0	0
Firearms and explosives	28	6	34
Cutting/piercing	361	518	879
Jumping from a high place	4	12	16
Other self-inflicted injuries	217	305	522
Total self-inflicted injuries	1,837	3,216	5,053

Source: Inpatient and Ambulatory Surgery Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.

Table 24. Assaultive injuries (to persons treated as hospital inpatients or in hospital-based ambulatory surgery settings and FASCs), 2001

Statewide

Injury Category	Male	Female	Total Cases
Unarmed fight or brawl	634	133	767
Rape	0	7	7
Poisoning	2	5	7
Hanging and strangling	1	2	3
Firearms and explosives	210	23	233
Cutting/piercing	157	33	190
Child battering and other maltreatment	74	170	244
Striking by blunt or thrown object	138	23	161
Bite of human being	20	7	27
Other assaultive injuries	362	126	488
Total assaultive injuries	1,598	529	2,127

Source: Inpatient and Ambulatory Surgery Data, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services.